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10/599,399	03/16/2007	Sarah Michelle Lipman	06727/0205544-US0	8260
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EXAMINER				
XAVIER, ANTONIO J				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/599,399

Applicant(s)

LIPMAN ET AL.

Examiner

ANTONIO XAVIER

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,7-10,15,18,22,24-31,36-39,44,47,51 and 53-58 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 27 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-846)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/27/07, 7/37/07 and 4/17/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Continuation of Disposition of Claims: Claims **withdrawn** from consideration are 3-6,11-14,16,17,19-21,23,32-35,40-43,45,46,48-50 and 52.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. Paragraph [0052] recites the following sentences: "a is the scattering coefficient of the screen. Delete corresponding sentence in text." Examiner notes this appears to be an internal note that was not removed before submission of the application.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1, 7, 9, 27, 30, 36, 38 and 56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "generally" in Claims 1, 7, 9, 27, 30, 36, 38 and 56 is a relative term which renders the claim indefinite. The term "generally" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one

of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 7-9, 15, 18 and 27 are rejected under 35 U.S.C. 102 (b) as being anticipated by Oikawa et al. (U.S. Pat. No.: 4,320,292).

With respect to Claim 1, Oikawa teaches an interface apparatus comprising:

a panel defining at least one edge (Figs. 1, 2 and 6-11);

at least one detector arranged along said at least one edge of said panel (Fig. 1, items 13 and 14 and Figs. 6-7, items 68); and

an electromagnetic radiation beam emitter operative to direct at least one beam of electromagnetic radiation onto said panel from a variable distance and at a variable angle (Figs. 1-3 and 7 and Col. 6, lines 49-51);

said panel being operative to transmit electromagnetic radiation from said at least one beam impinging thereon to said at least one edge thereof, for detection by said at

least one detector (Figs. 1, 2 and 6-11 and Col. 3, lines 28-46 teach the light from the input device is scattered and detected at the edges), said panel being operative to generally attenuate said electromagnetic radiation passing there through to said at least one edge as a function of the distance traveled by the electromagnetic radiation through the panel (Col. 3, line 65. Examiner notes that the light inherently attenuates as a function of time and distance traveled), whereby said at least one detector is operative to provide at least one output (Col. 3, lines 34-52) which can be used to determine said variable distance and said variable angle (Examiner is not giving patentable weight to the intended use of the detector output but notes a similar limitation has been fully addressed with regards to the method of Claim 30, discussed below).

With respect to Claim 2, Oikawa teaches the interface apparatus according to Claim 1, discussed above, and wherein said panel is selected from a group consisting of: a display (Col. 9, lines 17-20), a mobile telephone display panel, a hand-held computing device display panel, a television panel and an input pad panel.

With respect to Claim 7, Oikawa teaches the interface apparatus according to Claim 1, discussed above, and wherein said at least one detector comprises a generally linear array of detectors (Fig. 1).

With respect to Claim 8, Oikawa teaches the interface apparatus according to Claim 1, discussed above, and wherein said at least one detector is capable of

detecting said electromagnetic radiation at predetermined frequencies in at least one of visible and non-visible ranges (Col. 6, lines 49-51 teach the light source is an infrared ray. Examiner notes that a detector designed to detect an infrared ray inherently teaches detection of electromagnetic radiation at a predetermined frequency in non-visible ranges. Examiner further notes that the predetermined frequency in the claim as written is not defined and the group including at least one of visible and non-visible ranges reads on all electromagnetic radiation).

With respect to Claim 9, Oikawa teaches the interface apparatus according to Claim 1, discussed above, and wherein said electromagnetic radiation beam emitter is operative to provide at least one of a generally conical beam (Fig. 2 teaches a conical beam and Col. 6, line 53 teaches a conical tip), at least one generally collimated beam, at least one beam having a generally asymmetrical cross section, at least one beam having a generally pyramidal shape and at least one beam having a generally polygonal cross section.

With respect to Claim 15, Oikawa teaches the interface apparatus according to Claim 1, discussed above, and wherein said electromagnetic radiation beam emitter is operative to provide at least one of a modulated beam, a beam of visible light and a beam of non-visible electromagnetic radiation (Col. 6, lines 49-51).

With respect to Claim 18, Oikawa teaches the interface apparatus according to Claim 1, discussed above, and also comprising detector output processing circuitry operative to receive at least one output of said at least one detector and to provide an output indication of at least one of location, orientation, shape and size of at least one impingement spot defined by impingement of said at least one electromagnetic radiation beam on said panel (Col. 3, lines 34-52).

With respect to Claim 27, Oikawa teaches the interface apparatus according to Claim 1, discussed above, wherein impingement of said beam on said panel provides a generally elliptical impingement spot (Fig. 2 and Col. 6, line 53 teach a conical shaped beam. Examiner notes that a conical shaped beam provides a generally elliptical impingement spot, particularly when the beam is at an angle).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa et al.

With respect to Claim 10, Oikawa teaches the interface apparatus according to Claim 1, discussed above. However, Oikawa fails to expressly teach wherein said electromagnetic radiation beam emitter is operative to provide a plurality of beams.

Examiner takes official notice that providing a plurality of beams is well known in the art. It would have been obvious to one of ordinary skill in the art to modify the light pen of Oikawa to provide a plurality of beams to improve the functionality and versatility of the overall system.

8. Claims 22, 24-26 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa et al. (U.S. Pat. No.: 4,320,292) in view of Lipman et al. (WO 03/104965).

With respect to Claim 22, Oikawa teaches the interface apparatus according to Claim 1, discussed above, and also comprising detector output processing circuitry operative to receive at least one output of said at least one detector and to provide an output indication. However, Oikawa fails to expressly teach wherein the output

indication is at least one of the location and angular orientation of said electromagnetic radiation beam emitter.

Lipman teaches a light pen system comprising detector output processing circuitry operative to receive at least one output of said at least one detector and to provide an output indication of at least one of the location and angular orientation of said electromagnetic radiation beam emitter (p.7, line 23-p.8, line 26). It would have been obvious to one of ordinary skill in the art to modify the detection system of Oikawa to include the stylus and angle detection of Lipman to provide advanced functionality resulting in an intuitive and responsive user interface (Lipman, p. 5, line 10).

The further limitations of Claims 24-26 are rejected for substantially the same reasons as Claim 22, discussed above.

With respect to Claim 28, Oikawa teaches the interface apparatus according to Claim 27, discussed above, and also comprising detector output processing circuitry. However, Oikawa fails to expressly teach detector output processing circuitry operative to determine a ratio of a major axis and a minor axis of said elliptical impingement spot, thereby to determine an angle of intersection between said beam and said panel.

Lipman teaches calculating the elliptical eccentricity of the light incident on the display and determining an angle of intersection between said beam and said panel (p.7, line 23-p.8, line 24) except for determining a ratio of a major axis and a minor axis of said elliptical impingement spot. It would have been obvious to one of ordinary skill in

the art to modify the detection system of Oikawa to include the stylus and angle detection of Lipman as well as the ability to determine a ratio of a major axis and a minor axis of said elliptical impingement spot since the Examiner takes Official Notice of the art recognized equivalence of using the major/minor axis of said elliptical impingement and Lipman's calculation of the elliptical eccentricity for their use in determining an angle of intersection and the selection of any of these known equivalents would be within the level of ordinary skill in the art.

With respect to Claim 29, Oikawa teaches the interface apparatus according to Claim 1, discussed above. However, Oikawa fails to expressly teach analysis circuitry operative to employ detected variations in intensity of said electromagnetic radiation at different locations on an impingement spot defined by impingement of said beam on said panel, thereby to assist in determination of an angle of intersection between said beam and said panel.

Lipman teaches analysis circuitry operative to employ detected variations in intensity of said electromagnetic radiation at different locations on an impingement spot defined by impingement of said beam on said panel, thereby to assist in determination of an angle of intersection between said beam and said panel (p.7, line 23-p.8, line 24).

With respect to Claim 30, Oikawa teaches an interface method comprising: providing a panel defining at least one edge (Figs. 1, 2 and 6-11), at least one detector arranged along said at least one edge of said panel (Fig. 1, items 13 and 14 and Figs.

6-7, items 68) and an electromagnetic radiation beam emitter operative to direct at least one beam of electromagnetic radiation onto said panel from a variable distance and at a variable angle (Figs. 1-3 and 7 and Col. 6, lines 49-51);

directing said beam of electromagnetic radiation from said electromagnetic radiation beam emitter onto said panel, thereby producing at least one impingement spot (Figs. 1, 2 and 7 and Col. 3, lines 28-46 teach the light from the input device is directed onto the panel producing at least one impingement spot and then scattered and detected at the edges);

employing said panel to transmit electromagnetic radiation from said at least one impingement spot to said at least one edge thereof (Figs. 1, 2 and 6-11 and Col. 3, lines 28-46 teach the light from the input device is scattered and detected at the edges), said panel being operative to generally attenuate said electromagnetic radiation passing therethrough to said at least one edge as a function of the distance traveled by the electromagnetic radiation through the panel (Col. 3, line 65. Examiner notes that the light inherently attenuates as a function of time and distance traveled);

detecting, by said at least one detector, said electromagnetic radiation transmitted by said panel to said at least one edge (Col. 3, lines 34-52);

However, Oikawa fails to expressly teach employing an output of said at least one detector to determine said variable distance and said variable angle (emphasis added).

Lipman teaches a light pen system to receive at least one output of said at least one detector and to determine said variable distance and variable angle (p.7, line 23-

p.8, line 24). It would have been obvious to one of ordinary skill in the art to modify the detection system of Oikawa to include the stylus and angle detection of Lipman to provide advanced functionality resulting in an intuitive and responsive user interface (Lipman, p. 5, line 10).

The further limitations of Claims 31, 36-39, 44, 47, 51 and 53-58 are rejected for substantially the same reasons as Claims 2, 7-10, 15, 18, 22 and 24-29, discussed above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goszyk (U.S. Pat. No.: 6,153,836) teaches a stylus with a plurality of beams.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTONIO XAVIER whose telephone number is 571-270-7688. The examiner can normally be reached on M-Th 8:30am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. X./
Examiner, Art Unit 2629

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629